



No Meeting This Month Next Meeting in July

Latest meeting details found on club website at
<http://nevarc.org.au/>

Morse Code- CW 24 May anniversary of Samuel Morse's first coded telegraph message.

Samuel Finley Breese Morse (1791-1872), contributed to the invention of a single-wire telegraph system based on European telegraphs. He was a co-developer of the Morse code, and helped to develop the commercial use of telegraphy.

Telegraphy used long wires stretched between cities and depended on "Morse code", which is a way to spell with long and short pulses. Usually, those pulses were the result of a "code key", a kind of switch which caused an electromagnet on the other end goes the wire to attract an arm on a device called a "sounder" which makes a click. The operator learns to understand the meaning of the clicks, and can "copy" the code.

Essentially CW refers to a Morse transmission using a radio signal - the abbreviation coming from the fact that it uses a Carrier Wave, or Continuous Wave that is interrupted.

The 92 Code (Deliver Promptly) was first adopted by Western Union in 1859. The reason for this adoption was to reduce bandwidth usage over the telegraph lines and speed transmissions by utilizing a numerical code system for various frequently used phrases.

Today, amateur radio operators still use codes 73 and 88 profusely. Radio-amateurs also occasionally use the code 99 for "Go to Hell"[?], though this may be their own addition to the code-table. The Young Ladies Radio League uses the code 33, which means "love sealed with friendship and mutual respect between one YL [young lady] and another YL." The other codes have mostly fallen into disuse.

Q-Code The Q-code was originally instituted at the Radiotelegraph Convention held in London, 1912 and was intended for marine radiotelegraph use. Today they are still used as shorthand between radio operators. Although originally developed to shorten transmission times when using CW, they are frequently used in voice transmission; eg. QTH (station location), QRP (low or reduced power), and QSL (confirm).

Distress Signals

When wireless radiotelegraph machines first made their way onto ships around the turn of the 20th century, seamen in danger needed a way to attract attention.. At first, different organizations and countries had their own distress signals. The U.S. Navy used "NC," (the maritime flag signal for distress).. The Marconi Company, used "CQD." German operators used "...---...".

Having multiple distress signals was confusing and potentially dangerous.

SOS is the International Morse code distress signal.

First adopted by the German government April 1905, it became effective worldwide on 1 July 1908 under the second International Radiotelegraphic Convention. SOS remained the maritime radio distress signal until 1999, when it was replaced by the Global Maritime Distress and Safety System. (GMDSS)

Among the last military personnel to use Morse code were signallers on ships, who used it with signal lamps to communicate over short distances.. Merchant shipping replaced the Morse-based service in 1999 with satellites.

SOS is still recognized as a visual distress signal using flashing lights or reflections. Used as an audio signal, Morse code can be transmitted via a radio signal or even the sound of a car horn. In survival situations, Morse code can be produced via the banging of pots and pans or knocking loudly on a hollow object. Morse code can be transmitted using touch or pressure. For instance, tugs on a rope as a means to transmit Morse code to an injured miner.

The RST Code: R - Readability S - Strength T - Tone

A system of Signal Reporting was established about 1934 as a quick method of reporting Readability, Signal Strength and the Tone of CW. On SSB (voice contacts) , the final digit (tone) is normally omitted.

It is a system by which a received signal quality is graded, and a signal report is given. "Readability" is judged on a scale from 1 to 5, and "Strength" and "Tone" are judged on a scale from 1 to 9. "Tone" does not apply to a "phone" (voice) signal. A very high quality CW signal is "599" (pronounced "five nine nine"), and such a phone signal is "59" (pronounced "five nine").

The RST is also reported on QSL Cards and must be filled in correctly. Although many DX operations and contest stations merely report "599" as a convenience to avoid having to log each of the real reports.

The use of a large number of abbreviations and the formalised formats for ham radio contacts means that Morse or CW can be used by people from around the globe even with a poor command of languages like English.

The only Morse users left are licensed amateur radio enthusiasts, hams. Morse Code had long been a requirement for an amateur radio licence, so that hams could understand distress and other important traffic, and as the means of last resort when voice was not possible. Although in 2003 the requirement was dropped, large numbers of hams around the world still choose to use 'CW', and there is no sign of that dying out for a while yet.

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Morse Code Mini-Special



Photo A. A Spitfire Mk V fighter in 1944. (U.S. Army Air Force photo, via Wikimedia Commons)

Here's a World War II-vintage code key that was never intended to send messages over the radio or even a wired telegraph network ... it found its use IN the air rather than ON the air.

A Most Unusual Morse Key

BY NEIL FOSTER,* N4FN/GØNBJ

My interest in and affection for the Supermarine Spitfire fighter (Photo A) started in September 1941 when my dad, Edward, who was in the Army Air Corps and flew Boeing B-25 Mitchells in the Pacific during World War II, made a model airplane for me (Photo B) that was not a Spitfire but appears to be a British Defiant.

Growing up during the war led me to the Spit and also caused me to get in trouble at school since I was drawing pictures of the Spitfire when I was supposed to be doing other classwork.

Many years passed before I saw my first Spit "in the flesh." My friends, Tom Southwell, G4FEU (SK), and his wife, Rhoda G1UOX (SK), traveled with me to Wales on holiday. When we crossed the border from England to Wales, we came upon the Royal Air Force (RAF) base at Sealand. At the main entrance was a beautiful Spitfire on a pedestal on gate guard duty. Tom had his old RAF card and, thanks to him, I was able to get inside the gate to take photographs. Tom and I kept a weekly sked for over 30 years until he passed away a year ago.

Several years ago, another friend named Tom, Tom Calvanelli, a retired Delta Airlines Senior Captain — who knew of my long-time affection for the Spitfire and that I was

an avid and active ham radio operator — presented me a small gift-wrapped box at Christmas. When I opened the wrapping, I could not believe what I saw: A brand-new, in-the-original box, unused Spitfire Morse code key. (Photo C; I have, of course, saved the box as all hams should do with their equipment)

This led me to do some research on the key and its usage. In my collection of numerous framed large photographs and books, manuals and many models, I have several original and copies of Spitfire Pilot's manuals.

I thought I knew quite a bit about the Spits (see sidebar for the history of the plane and its designer) and, much to my surprise, I found in the manuals a reference to the key (Photo D). It was never meant to key a transmitter (although I did temporarily wire it to key my Yaesu FT-5000 just for fun). Rather, it keyed two light fixtures on the fuselage, one just aft of the radio aerial mast, and one under the belly of the airplane. That explained why our British cousins marked the selector switch as "Upward Morse" and "Downward Morse" (look closely at Photo C).

The key was mounted on the starboard side of the cockpit just above the "Chassis" (landing gear) selector switch (Photo E). The key itself was adjustable for pressure and it was mounted out the side of the switch box so that, even with gloves on, the pilot could easily key it (Photo F). The design

*e-mail: <archernf@earthlink.net>



Photo B. The author in September 1941 holding the model my Dad made for me. (Photos B-J courtesy of the author)



Photo C. The Morse key atop the original box as given to me.

A Bit of History ... of the Spitfire and its Designer

The Spitfire — commonly known as the Spit — was designed as a short-range, high-performance interceptor aircraft by Reginald J. Mitchell, chief designer at Supermarine Aviation Works, which operated as a subsidiary of Vickers-Armstrong after 1928. In his early work career at the age of 16, Mitchell gained an apprenticeship at Kerr Stuart & Co. of Fenton, a locomotive engineering works. At the end of his apprenticeship, he worked in the drawing office at Kerr Stuart and studied engineering and mathematics at night school.

In 1917, Mitchell joined the Supermarine Aviation Works at Southampton. Advancing quickly within the company, he was appointed Chief Designer in 1919, was made Chief Engineer in 1920 and Technical Director in 1927. He was so highly regarded that when Vickers took over Supermarine in 1928, one of the conditions was that Mitchell stay as a designer for the next five years.

Mitchell pushed the Spitfire's distinctive elliptical wing (designed by B. Shenstone) to have the thinnest possible cross-section, helping give the aircraft a higher top speed than several contemporary fighters, including the Hawker Hurricane. Mitchell continued to refine the design until his death from cancer in 1937, whereupon his colleague, Joseph Smith, took over as chief designer, overseeing the development of the Spitfire through its multitude of Mark variants. If the movie about Mitchell and the Spit is accurate, he only saw the prototype fly and passed away shortly after that.

During the Battle of Britain, from July to October 1940, the

Spitfire was perceived by the public to be the main Royal Air Force fighter, though the more numerous Hawker Hurricane models shouldered a greater proportion of the burden against Nazi Germany's air force, the Luftwaffe. Spitfire units, however, had a lower attrition rate and a higher victory-to-loss ratio than those flying Hurricanes because of their higher performance. Spitfires in general were tasked with engaging Luftwaffe fighters (mainly Messerschmitt Bf 109E series aircraft, which were a close match for the Spitfire) during the battle.

After the Battle of Britain, the Spitfire superseded the Hurricane to become the backbone of the RAF Fighter Command, and saw action in the European, Mediterranean, Pacific, and Southeast Asian theaters. Much loved by its pilots, the Spitfire served in several roles, including interceptor, photo-reconnaissance, fighter-bomber and trainer, and it continued to serve in these roles until the 1950s.

The Seafire was a carrier-based adaptation of the Spitfire that served in the Fleet Air Arm from 1942 through to the mid-1950s and it had a folding wing. Although the original airframe was designed to be powered by a 12-cylinder Rolls-Royce Merlin engine producing 1,030 horsepower (768 kilowatts), it was strong enough and adaptable enough to use increasingly powerful Merlins and, in later marks, Rolls-Royce Griffon engines producing up to 2,340 horsepower (1,745 kilowatts). As a consequence, the Spitfire's performance and capabilities improved over the course of its service life.

of the box was that of a clamshell, so by loosening a thumb screw the box would swing open to show the wiring diagrams and key tension adjustment (Photo G). In my research, I found that the two lights were used for identification and for pilots to contact each other via flashing the lamp in Morse code due to wartime radio silence conditions. There

was also provision to use either one or both lights at the same time, or to have them stay on steady.

The Rest of the Story...

Recently, purely by accident, I stumbled upon a gentleman in England who had the complete light fixture listed on eBay. That was the piece that was missing. I

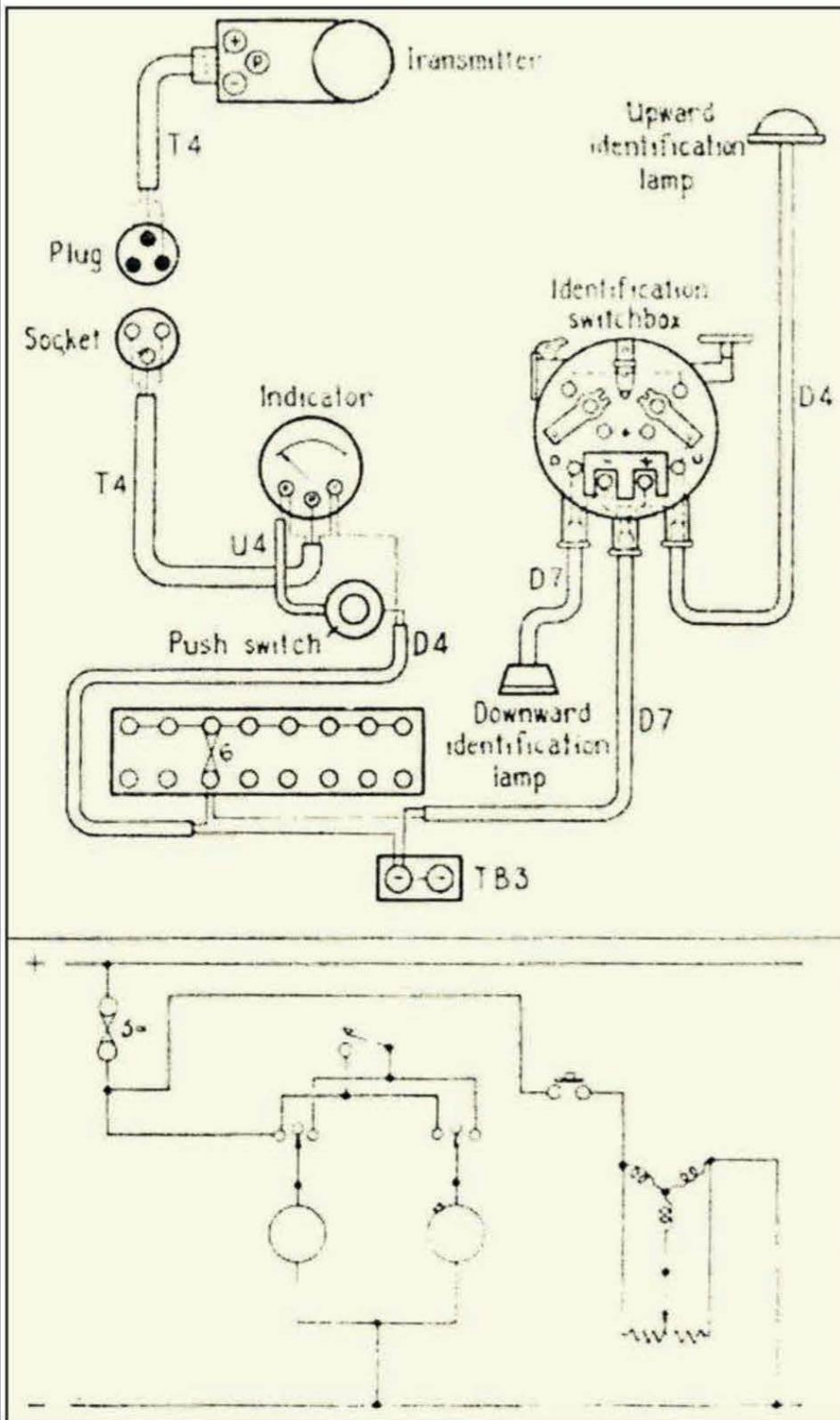


Photo D. Spitfire key and lamp wiring diagram from the Air Ministry Pilot's Manual.

NEVARC Nets

40M Net

Monday, Wednesday and
Fridays

10am Local time (East
coast)

7.095 MHz LSB

Hosted by Ron VK3MRH
Using club call VK3ANE

80M Net

Wednesday 20:30 Local
time

3.622 MHz LSB

Hosted by Ron VK3MRH
Using the club call
VK3ANE

2M Nets

A 2M net will be
commenced on the
VK3RWO/VK2RWD
repeaters

Once they are fully
commissioned



Photo E. Key mounted on the starboard side of the cockpit. Note that the key itself was mounted on the outside of the switchbox (very top of photo) to let the pilot use it, even with gloves on.

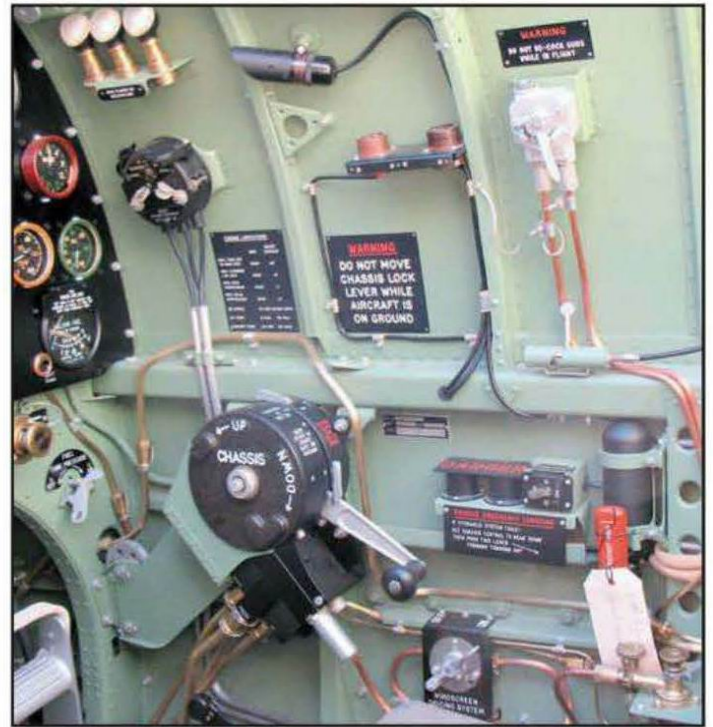


Photo F. Key mounted on the starboard side of the cockpit above the chassis, or landing gear, selector.

bid, and was the winner. About 10 days later, a well-wrapped registered mail parcel arrived, and to my surprise, although it was listed as "used," it was actually new in the box, still wrapped in the wax paper that was in use originally (Photo H). Consulting an Air Ministry parts listing and the A/M markings and part numbers on the box and lamp I could indeed verify it was new surplus from a Spit.

My friend and woodworking wizard Jim Stafford, W4QO, helped me with the display base mounting of the key and identification lamp (Photo I).

Wait, There's More...

I had some email correspondence with the gent in England and he informed me that he had numerous instruments and

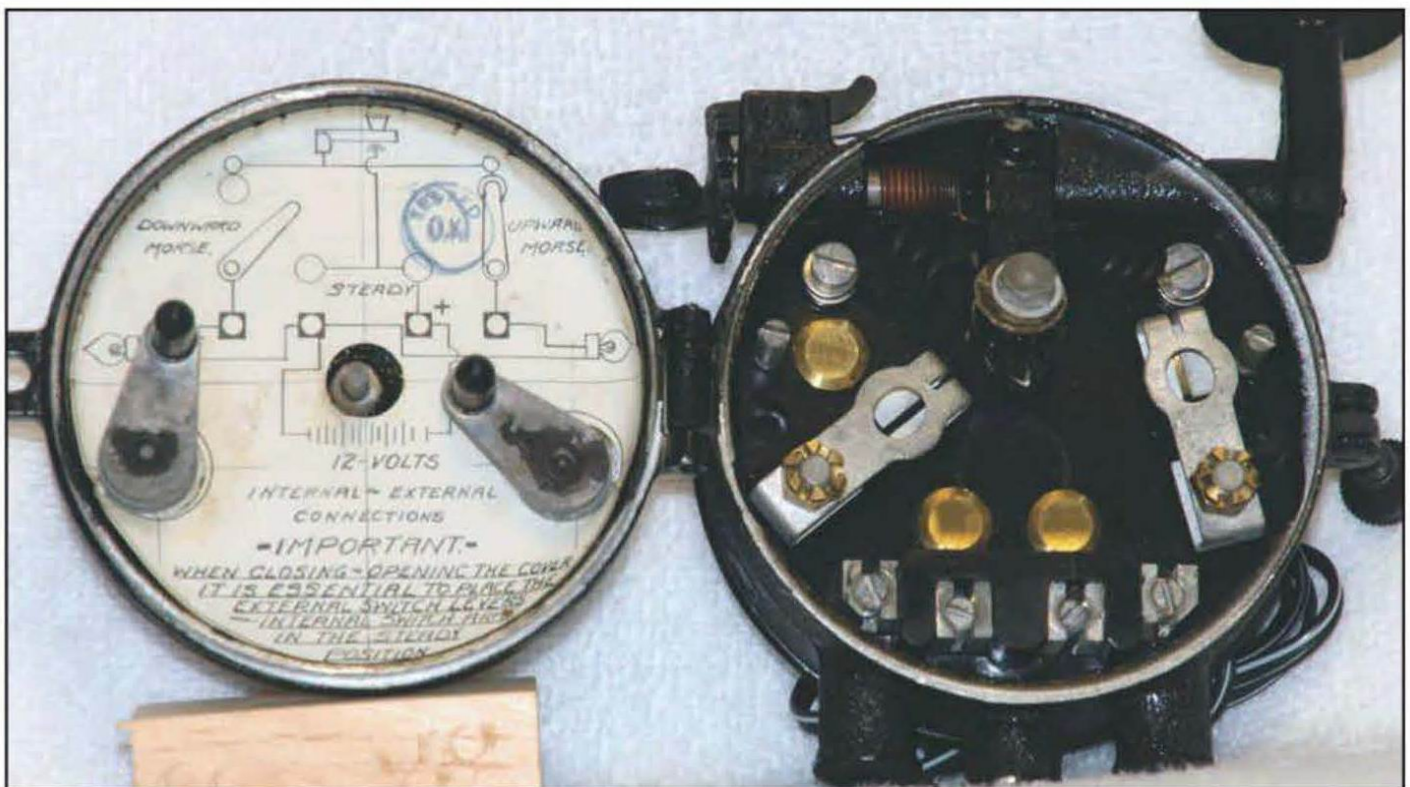


Photo G. Inside view of the key showing circuit switch diagram.

airframe parts for the Spit and that some of the instruments were a problem to ship since they had radioactive dials on them. I think my wife, Nancy, who supports my radio interest, would question my sanity if I had a Spitfire canopy or rudder shipped to me. As it is, she is convinced that all we do is talk on the radio and meet to have lunch/dinner all the time. She is probably correct. It took several years after we married to convince her of the importance of saving gear boxes. After 57 years in the hobby, I have a mountain.

If having the Morse key and lamp (Photo J) were not enough, I just acquired an artificial gyro horizon from a Spit. This is one of the instruments that did not have "glow in the dark" coating.

Now, does anyone know where I can find a Rolls Royce Merlin or Griffon engine?

References:

1. Supermarine Spitfire Pilot's Flight Operating Manual, Air Ministry, July 1940
2. July 1940 Air Publication 1565B, Pilots Notes, Air Publication 2280 A, B & C Wikipedia
3. Great Britain Air Ministry 1918-1964



Photo H. Original identification lamp (one of two mounted on the Spitfire) operated by the key inside the cockpit.

Thanks to my wife, Dr. Nancy Wadel, educator, and to Jim Smith, W4JDS, retired Atlanta Journal Copy Desk Manager, for their editorial expertise. My wife says I am guilty of writing the world's longest run-on sentences.



Photo I. Finished key and lamp assembly mounted; it is lit using a 12-volt DC supply.

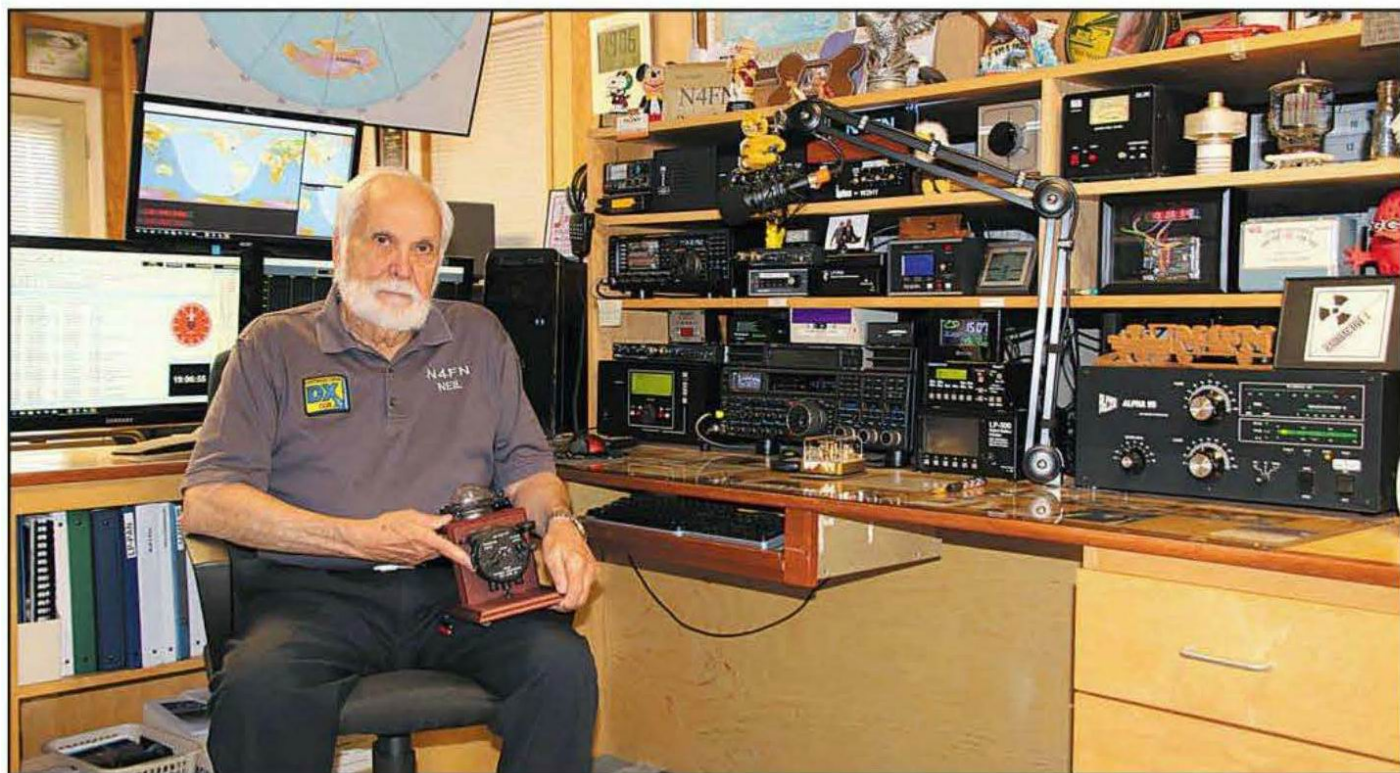


Photo J. The author in his well-appointed shack with his mounted Spitfire key and signal lamp.



Special NEVARC Members Only Offer

SWAR-GREES® is a patented RF lubricant that lowers SWR, VSWR and improves Return Loss on coaxial cables. Applied to the outside of the coax, it dramatically improves your aerial match by making signals slide along the cable with less RF friction (hysteresis), thus improving the SWR, VSWR and Return Loss. You also get increased power handling and better 'talk power' because the faster-moving signal can build up a greater RF inertia. This gives at least a 9dB per kHz per metre improvement on SSB and even more on weak-signal modes. Some have reported improvements of up to over 12dBm per kHz per metre (reducing SWR by up to 3.7). SWAR-GREES® is fully compatible with SSB, AM, FM and all digimodes, and even works with legacy modes. This works on all bands from LF up to 70cm.

How to use SWAR-GREES®

Spread a thin layer of SWAR-GREES® on the outside of your coax. Leave at least 1cm between the SWAR-GREES® and the connectors (otherwise this would create a reverse balun). One tin will cover up to 50m of RG58-size coax, or about 20m of RG-213 cable. If you are using a wire aerial (eg a G5RV) you should also coat the radiating elements, but do NOT put SWAR-GREES® on the ladder-line section because the counter-circulating voltage currents can cause inverse impedance subduction.

On systems for 6m to 70cm you can simply apply SWAR-GREES® to the radiating elements, there is no need to put it on the coax. Some have reported improvements of up to over 12dBm per kHz per metre and improving the noise figure, depending on system latitude. Tests with Yagis show that a liberal coating on the driven element, reflector and first two directors is sufficient; there is no benefit to coating all the elements, which saves you money.

Each application of SWAR-GREES® typically lasts 6 months and should be renewed periodically.

Put SWAR-GREES® on your coax for better matching! Try it today and see how much your system improves.

Launched on 1st April

A Matter of Age...

HAVE YOU EVER BEEN GUILTY OF LOOKING AT OTHERS YOUR OWN AGE AND THINKING, SURELY I CAN'T LOOK THAT OLD. WELL.... YOU'LL LOVE THIS ONE.

MY NAME IS ALICE SMITH AND I WAS SITTING IN THE WAITING ROOM FOR MY FIRST APPOINTMENT WITH A NEW DENTIST. I NOTICED HIS DDS DIPLOMA, WHICH BORE HIS FULL NAME.

SUDDENLY, I REMEMBERED A TALL, HANDSOME, DARK-HAIRED BOY WITH THE SAME NAME HAD BEEN IN MY HIGH SCHOOL CLASS SOME 30-ODD YEARS AGO. COULD HE BE THE SAME GUY THAT I HAD A SECRET CRUSH ON, WAY BACK THEN?

UPON SEEING HIM, HOWEVER, I QUICKLY DISCARDED ANY SUCH THOUGHT. THIS BALDING, GRAY-HAIRED MAN WITH THE DEEPLY LINED FACE WAS WAY TOO OLD TO HAVE BEEN MY CLASSMATE.

AFTER HE EXAMINED MY TEETH, I ASKED HIM IF HE HAD ATTENDED MORGAN PARK HIGH SCHOOL.

'YES. YES, I DID. I'M A MUSTANG,' HE GLEAMED WITH PRIDE.

WHEN DID YOU GRADUATE?' I ASKED.

HE ANSWERED, 'IN 1975... WHY DO YOU ASK?'

'YOU WERE IN MY CLASS!' I EXCLAIMED.

HE LOOKED AT ME CLOSELY HE ASKED,

.
.
.
.
.
.

. 'WHAT DID YOU TEACH???'



**"Dear Andy: How have you been?
Your mother and I are fine. We miss you.
Please sign off your computer and come
downstairs for something to eat. Love, Dad."**



**"I MET SOMEONE WONDERFUL IN A CHAT ROOM...
AND THEN I FOUND OUT SHE'S A CAT!"**

President, VK2VU, Gary
Vice President, VK3CM, Brenton
Secretary, VK2FKLR, Kathleen
Treasurer, Amy



NEVARC CLUB PROFILE

History

The North East Victoria Amateur Radio Club (NEVARC) formed in 2014.
As of the 7th August 2014, Incorporated, Registered Incorporation number A0061589C.
NEVARC is an affiliated club of the Wireless Institute of Australia.

Meetings

Meetings details are on the club website, check for latest scheduled details.
Meetings held at the Belviour Guides Hall, Silva Drive West Wodonga.

VK3ANE NETS

HF

7.095 MHz Monday, Wednesday, Friday - 10am Local time
3.622 MHz Wednesday - 8.30pm Local time

VHF

VK3RWO Repeater 146.975 MHz – Monday - 8pm Local time
All nets are hosted by Ron Hanel VK3MRH (soon to be VK3ARH) using the club callsign VK3ANE

Benefits

To provide the opportunity for Amateur Radio Operators and Short Wave Listeners to enhance their hobby through interaction with other Amateur Radio Operators and Short Wave Listeners. Free technology and related presentations, sponsored construction activities, discounted (and sometimes free) equipment, network of likeminded radio and electronics enthusiasts. Excellent club facilities and environment, ample car parking.

Website: www.nevarc.net.au

Postal: NEVARC Secretary
PO Box 69
Wahgunyah Vic 3683

All editors' comments and other opinions in submitted articles may not always represent the opinions of the committee or the members of NEVARC, but published in spirit, to promote interest and active discussion on club activities and the promotion of Amateur Radio. Contributions to NEVARC News are always welcome from members.

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Please include a stamped self-addressed envelope if you require your submission notes returned.

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Attachments of (or thought to be) executable code or virulently affected emails will not be opened.

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While we strive to be accurate, no responsibility taken for errors, omissions, or other perceived deficiencies, in respect of information contained in technical or other articles.

Any dates, times and locations given for upcoming events please check with a reliable source closer to the event.

This is particularly true for pre-planned outdoor activities affected by adverse weather etc.

The club website [http://nevarc.org.au/](http://nevarc.org.au) has current information on planned events and scheduled meeting dates.

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